

Air Pressure & Wind Assessment

1. 12,000 kilograms per meter of pressure is pushing down on you from the atmosphere, yet you don't notice it. Why don't you collapse under that weight?
 - a. Your body is just use to it.
 - b. 12,000 kilograms per meter is not a lot of weight.
 - c. There is also pressure in your body pushing up and out against the atmosphere.
 - d. Our bones are strong.
2. Strong winds tend to occur when there is a steep pressure gradient. What is a steep pressure gradient?
 - a. A quick change in pressure.
 - b. A location where isobars are far apart.
 - c. A slow change in pressure.
 - d. A long isobar.
3. Winds rotate counter-clockwise around a _____ in the Northern Hemisphere due to _____.
 - a. cyclone, friction
 - b. cyclone, Coriolis Effect
 - c. anticyclone, earth's rotation
 - d. anticyclone, pressure gradients
4. Because of the jet stream, what pattern is seen in weather throughout the United States?
 - a. We always have windy conditions.
 - b. We have tornadoes in the middle of the country.
 - c. Weather generally moves from West to East.
 - d. Cyclone's spin fast.
5. What is responsible for the warmer than average winter we are currently experiencing and occurs when ocean currents in the Pacific bring warmer than normal temperatures to the East?
 - a. El Nino
 - b. Coriolis Effect
 - c. Monsoon
 - d. Anemometer
6. One advantage to using a _____ barometer is that it is easy to transport in order to measure _____.
 - a. mercury, pressure
 - b. aneroid, pressure
 - c. anemometer, pressure
 - d. Prevailing, wind
7. The sun is the ultimate source of wind because the sun causes Earth's surface to heat unevenly which causes different _____.
 - a. wind
 - b. pressures
 - c. humidity
 - d. fronts
8. Air (wind) always moves from an area of _____ to _____.
 - a. high pressure , low pressure
 - b. low pressure, high pressure
 - c. cold temperature , hot temperature
 - d. low latitude, high altitude

For numbers 9-13 use the global wind model shown below.

9. In the global wind model, which location represents the North East Trade Winds?

- a. Location 1
- b. Location 2
- c. Location 3
- d. Location 4
- e. Location 5
- f. Location 6

10. The Polar Front occurs where the Polar Easterlies and the Westerlies converge. Where is the polar front?

- a. Location 1
- b. Location 2
- c. Location 3
- d. Location 4
- e. Location 5
- f. Location 6

11. The Inter Tropical Convergence Zone (ITCZ) occurs where the North East and South East Trade Winds converge. Where is the ITCZ?

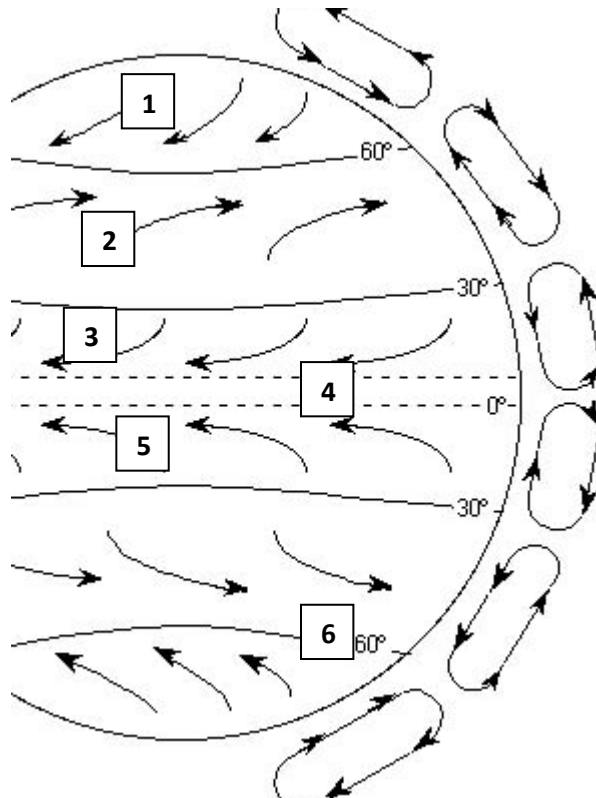
- a. Location 1
- b. Location 2
- c. Location 3
- d. Location 4
- e. Location 5
- f. Location 6

12. Which location is responsible for moving weather West to East across the United States?

- a. Location 1
- b. Location 2
- c. Location 3
- d. Location 4
- e. Location 5
- f. Location 6

13. Which location(s) would you find a low pressure belt?

- a. Location 1 and 3
- b. Location 2 and 3
- c. Location 3
- d. Location 4 and 6
- e. Location 1
- f. Location 5 and 3



- 14. True/False:** Surface convergence associated with a low-pressure system is balanced by divergence aloft.
- a. True
 - b. False
- 15. Use the provided WMO Weather Station Model Symbol Charts to decipher the current conditions for the WMO Station Model shown in the exam document. According to the station model, what is the wind speed and direction?**
- a. 65-66 mph, SE
 - b. 113-118 mph, S
 - c. 119-123 mph, NE
 - d. 113-118 mph, NE
- 16. Use the provided WMO Weather Station Model Symbol Charts to decipher the current conditions for the WMO Station Model shown in the exam document. According to the station model, what are the sky conditions like?**
- a. clear, sunny with little to no cloud cover
 - b. partly cloudy, scattered cumulus clouds
 - c. overcast, dense nimbostratus
 - d. overcast, cirrus clouds
- 17. Use the provided WMO Weather Station Model Symbol Charts to decipher the current conditions for the WMO Station Model shown in the exam document. According to the station model, what type of precipitation, if any, is occurring?**
- a. moderate rain
 - b. light snow
 - c. heavy thunderstorm
 - d. moderate freezing rain
- 18. Use the provided WMO Weather Station Model Symbol Charts to decipher the current conditions for the WMO Station Model shown in the exam document. According to the station model, what is the current pressure and pressure tendency?**
- a. 968, falling
 - b. 996.8, rising
 - c. 968, rising
 - d. 996.8, falling
- 19. Use the provided WMO Weather Station Model Symbol Charts to decipher the current conditions for the WMO Station Model shown in the exam document. **True or False:** According to the station model, the weather at this current location could be described as poor stormy weather most likely associated with an approaching low pressure system.**
- a. True
 - b. False
- 20. Based on the weather station models shown at figure #20 in the exam document, what kind of pressure center is located at point A?**
- a. High
 - b. Low
 - c. jet stream
- 21. Based on the weather map shown at #21 in the exam document, what kind of weather conditions would the East Coast likely be experiencing?**
- a. clear, sunny weather conditions, which will give way to cloudy/stormy conditions
 - b. cloudy/stormy weather conditions, which will give way to clear, sunny conditions
- 22. What is the map at #22 in the exam document showing?**
- a. temperatures across the nation
 - b. cloud cover across the nation
 - c. pressures and pressure center distribution across the nation
 - d. wind speed/direction across the nation
- 23. **True or False:** Air always moves from areas of low pressure to areas of high pressure.**
- a. True
 - b. False
- 24. Winds that blow towards the equator from the Northern Hemisphere's subtropical-high pressure zone are known as...**
- a. Polar Easterlies
 - b. SE Trade Winds
 - c. NE Trade Winds
 - d. Westerlies

- 25.** Consider how air moves near a low pressure center, and how the Coriolis Effect influences moving gasses, liquids, and objects not in contact with Earth's surface in the Southern Hemisphere. In which direction do low pressure centers (cyclones) rotate in the Southern Hemisphere?
- a. clockwise
 - b. counter clockwise
 - c. no cyclones in the southern hemisphere
 - d. west to east
- 26.** Why do pressure gradients exist across the surface of Earth?
- a. Earth rotates
 - b. due to tectonic plate activity
 - c. due to the solar cycle
 - d. unequal heating of Earth's surface
- 27.** The direction of moving air or wind refers to...
- a. the speed of the wind
 - b. the direction the wind is blowing towards
 - c. the direction describing movement from high to low pressure
 - d. the direction the wind is blowing from
- 28.** Warm surfaces across the planet will lead to...
- a. high pressure systems because cold air sinks
 - b. high pressure systems because cold air rises
 - c. low pressure systems because warm air rises
 - d. low pressure systems because warm air sinks
- 29.** Desert regions and landscapes, such as South Western USA, would most likely be dominated by why type of pressure systems?
- a. high pressure systems
 - b. low pressure systems
 - c. wet monsoons
 - d. El Nino
- 30.** The Sahara in North Africa and the Australian desert, as well as others, are associated with which pressure zone?
- a. equatorial low
 - b. polar high
 - c. subpolar low
 - d. subtropical high
- 31.** Low-pressure systems are usually associated with...
- a. descending air
 - b. diverging surface winds
 - c. clear weather
 - d. precipitation